Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in this application:

Listing of Claims

Claims 1–36 (canceled)

Claim 37 (currently amended): A method of processing sulfide minerals and concentrates by oxidation of sulfide minerals in an aqueous medium using an oxidizing agent which is one ~~ore~~ or more of nitric acid, nitrous acid and their oxides, the method comprising:

subjecting in an oxidation reactor a slurry containing the sulfide minerals to oxidation under agitation and under controlled conditions of slurry acidity, ~~wherein oxidation of the sulfide minerals is performed~~ using the oxidizing agent which is one [[ore]] or more of nitric acid, nitrous acid and their oxides ~~and is realized under agitation~~;

forming in the oxidation reactor a ~~sulphuric~~ sulfuric acid as a result of the sulfide oxidation [[and]];

constantly neutralizing the ~~sulphuric~~ sulfuric acid using an acidity neutralizer to an acidity level at which no formation of elementary sulfur occurs;

removing of heat released during the sulfide oxidation from [[an]] the oxidation reactor ~~in which~~;

transferring NO from the oxidation reactor into a regeneration oxidizer;

regenerating N_2O_3 from the transferred NO using air or oxygen in the regeneration oxidizer; and

transferring the regenerated N_2O_3 into the oxidation reactor;

wherein the temperature in the oxidation reactor is maintained in a range from 20 to 90 °C and

~~in which~~ wherein a liquid-to-solid ratio in the slurry in the oxidation reactor is between 1:1 to 5:1.

Claim 38 (previously presented): The method according to claim 37 in which the acidity neutralizer is one or more of $CaCO_3$, $MgCO_3$, $Ca(OH)_2$, CaO, NaOH and $CaHPO_4$.

Claim 39 (previously presented): The method according to claim 37 in which the temperature is maintained in the range of 65-85°C.

Claim 40 (currently amended): The method according to claim 37, further comprising

separating ~~nitrogen oxides~~ the N_2O_3, formed in said method, from ~~inert nitrogen in the air~~ N_2 by absorbing the ~~nitrogen oxides in~~ N_2O_3 from a mix of gases comprising N_2 and N_2O_3 into a sulfuric acid solution which has a concentration in the range 75-98%; and

denitrating the sulfuric acid solution thermally by heating it to a temperature not exceeding 250°C, and/or chemically by introduction of a denitrating substance.

Claim 41 (previously presented): The method according to claim 40, in which the denitrating substance is one or more of an alcohol, formaldehyde and other chemical reducing agents.

Claim 42 (currently amended): The method according to claim [[39]] 37, further ~~including~~ comprising

separating the ~~nitrogen oxides~~ NO, formed in said method, from ~~inert nitrogen in the air~~ N_2 by absorbing the ~~nitrogen oxides in~~ NO from a mix of gases comprising N_2 and NO into a monovalent copper salt solution;

denitrating the monovalent copper salt solution using a dosed supply of compressed air, with [[the]] optional simultaneous heating of the solution.

Claim 43 (previously presented): The method according to claim 42 in which the monovalent copper salt solution contains a stabilizing agent to impede oxidation of copper from monovalent to bivalent.

Claim 44 (currently amended): The method according to claim 43 in which the stabilizing agent is one or more of tributyl phosphate, adipodinitrile, or reducing agents such as formaldehyde or hydrazine.

Claim 45 (canceled)

Claim 46 (currently amended): The method according to claim 37, ~~further comprising~~ wherein the regenerating ~~a dinitrogen trioxide~~ the N_2O_3 from ~~a nitric oxide~~ the NO formed in said method is performed using pure oxygen in an individual regeneration oxidizer and at a temperature of 15-25°C. ~~so as to prevent the accumulation of nitric acid in the slurry~~.